

In The Claims

1. (original) An article comprising:

(A) a lean burn gasoline engine having an exhaust outlet;

(B) an upstream section having a close coupled catalyst composite in communication with the exhaust outlet, the upstream close coupled catalyst composite comprising:

(i) a first support;

(ii) a first platinum group component; and

(iii) a SO_x sorbent component selected from the group consisting of oxides and mixed oxides of barium, lanthanum, magnesium, manganese, neodymium, praseodymium, and strontium; and

(C) a downstream section comprising:

(i) a second support;

(ii) a second platinum group component; and

(iii) a NO_x sorbent component;

wherein the upstream section has substantially no components adversely affecting three-way conversion under operating conditions.

2. (original) The article according to claim 1, wherein the first and second supports are independently selected from the group consisting of alumina, titania, and zirconia compounds.

3. (original) The article according to claim 2, wherein the first and second supports are independently selected from the group consisting of alumina, alumina-zirconia, and alumina-ceria.

4. (original) The article according to claim 1, wherein the first platinum group metal component is selected from the group consisting of platinum, palladium, rhodium in combination with platinum or palladium, and mixtures thereof.

5. (original) The article according to claim 1, wherein the upstream section further comprises a third platinum group metal component different from the first platinum group metal component.

6. (original) The article according to claim 1, wherein the second platinum group metal component is selected from the group consisting of platinum, palladium, rhodium in combination with platinum or palladium, and mixtures thereof.

7. (original) The article according to claim 1, wherein the downstream section further comprises a fourth platinum group metal component different from the second platinum group metal component.

8. (original) The article according to claim 1, wherein the SO_x sorbent component is selected from the group consisting of oxides and mixed oxides of barium, lanthanum, magnesium, neodymium, praseodymium, and strontium.

9. (original) The article according to claim 8, wherein the SO_x sorbent component is selected from the group consisting of oxides and mixed oxides of barium, lanthanum, and magnesium.

10. (original) The article according to claim 8, wherein the SO_x sorbent component is selected from the group consisting of oxides and mixed oxides of neodymium, praseodymium, and strontium.

11. (original) The article according to claim 8, wherein the SO_x sorbent component is La₂O₃.

12. (original) The article according to claim 1, wherein the NO_x sorbent component is selected from the group consisting of alkaline earth metal components, alkali metal components, and rare earth metal components.

13. (original) The article according to claim 12, wherein the NO_x sorbent component is selected from the group consisting of oxides of calcium, strontium, and barium, oxides of potassium, sodium, lithium, and cesium, and oxides of cerium, lanthanum, praseodymium, and neodymium.

14. (original) The article according to claim 13, wherein the NO_x sorbent component is selected from the group consisting of oxides of calcium, strontium, and barium.

15. (original) The article according to claim 13, wherein the NO_x sorbent component is selected from the group consisting of oxides of potassium, sodium, lithium, and cesium.

16. (original) The article according to claim 12, wherein the NO_x sorbent component is at least one alkaline earth metal component and at least one rare earth metal component selected from the group consisting of lanthanum and neodymium.

17. (original) The article according to claim 1, wherein the upstream section or the downstream section, or both, further comprises a zirconium component.

18. (currently amended) The article according to claim 1, wherein the upstream section ~~substrate~~ or the downstream section ~~substrate~~, or both, is supported on a metal or ceramic honeycomb carrier or is self-compressed.

Claims 19-39 (withdrawn).

40. (original) A method of forming a catalyst composite having a close coupled upstream section and a downstream section which comprises the steps of:

(a) forming a close coupled upstream section comprising:

(i) a first support;

(ii) a first platinum group component; and

(iii) a SO_x sorbent component selected from the group consisting of oxides and mixed oxides of barium, lanthanum, magnesium, manganese, neodymium, praseodymium, and strontium; and

(b) forming a downstream section comprising:

(i) a second support;

(ii) a second platinum group component; and

(iii) a NO_x sorbent component;

wherein the upstream section has substantially no components adversely affecting three-way conversion under operating conditions.